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ABSTRACT

A study compared the content of children's drawings and verbal descriptions of a house. Drawing and verbal descriptions were collected in two sessions separated by a 1-week interval Participants were 16 children of 5 and 6 years of age who were in day care. Comparison of defining features in verbal and graphic descriptions revealed a distinction between basic structural and nonstructural elements of the house. Structural features were those considered prototypical of a house, such as doors, windows, roofs. Nonstructural features, such as trees, garages, kitchens, and furniture, were elements not prototypical of house descriptions. The basic structures of houses were represented by the majority of children in their drawings and descriptions. However, both prototypical items and their elaborations were more often drawn than verbalized. Nonstructural elements were separated on the basis of whether they were internal or external to the house. Features which could be seen on the outside of the house were more often depicted graphically, while those seen on inside were more often verbally represented. It is concluded that verbal and graphic representations of objects may rely on functionally distinguishable but interacting symbolic systems. (RH)

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# THE RELATIONSHIP BETWEEN YOUNG CHILDREN'S DRAWINGS AND VERBAL DESCRIPTIONS OF A COMMON OBJECT

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Abstract

Recently, several researchers have investigated how children's verbal descriptions of familiar objects relate to their graphic portrayal of these same objects. These studies of children's performance on drawing and nondrawingtasks have yielded inconsistent results. The purpose of the research was to examine the specific relation between features of objects that are drawn versus verbally described. Sixteen 5- and 6-year-olds were given two tasks one week apart. One task consisted of drawing a house and the other required the children to verbally describe parts of a house. The order of administration of the two tasks were counterbalanced. The defining features represented in the verbal and graphic descriptions were then compared. The analyses revealed a distinction between the basic structural and nonstructural elements of a house. The basic structures of houses were represented by the majority of children in both their drawings and descriptions. However, both the prototypical items (door, windows, and roof) and their elaborations (i.e., doorknob, curtains, chimney) were more often drawn then verbalized. The nonstructural elements (ie., garage, wall, landscape) were separated on the basis of whether they were internal or external to the house. Those features which could be viewed on the exterior of the house were more often depicted graphically whereas those on the interior were more often verbally represented. These results indicate that verbal and graphic representations of objects may rely on functionally distinguishable but interacting symbolic systems.

The Relationship Between Young Children's Drawings and Verbal Descriptions of a Common Object

Theories of cognitive development have long hypothesized that as symbolic functions, drawings and language should share certain similarities. However, studies investigating the relationship between graphic and verbal representation have produced conflicting results, possibly due to the often artificial and nonstandard stimuli used to elicit both verbal and graphic descriptions. The present study attempts to address this issue by comparing the content of children's drawings and verbal descriptions as they relate to the same, familiar object: a house. It was expected that a relationship between drawings and verbal descriptions would be found.

## Method

### Subjects

The participants were 16 children (7 male, 9 female) ages 5 to 6 years drawn from an urban, middle-class day care center in New Jersey.

### Stimulus Materials

The stimulus materials used for the drawing task were 8 colors of crayons (black, blue, purple, orange, red, green, brown, and yellow) and white 8 1/2 X 11 inch paper. An audio-tape recorder was used for the verbal description task.

### Procedure

The experiment was conducted in 2 sessions about one week apart. Each child was brought from their classroom to another room and individually tested. Half the children received the drawing task session first and the other half received the verbal description task session first. For the drawing task, each child was provided with a sheet of paper and 8 crayons which were placed in front of the child in random order. The task consisted of the experimenter asking the child, " Please draw a picture of a house, the best you can. It can be any kind of house you like. Be sure and tell me when you're done." After each drawing, the experimenter gave a nonspecific, positive comment such as "That's very nice, thank you." For the verbal description task, the experimenter asked the child, "Tell me about houses. What parts do houses have?" In addition, a

prompt was made at the end of the list to probe for more items in their responses. The experimenter asked, "Can you think of anything else?"

Coding

Responses in both mediums were scored for inclusion of both type and number of discrete features. Three types of features were scored: Structural, Elaborated structural, and Nonstructural. Structural features were those that can be considered prototypical of a house, such as doors, windows, roofs. Other features, such as doorknobs, curtains, chimneys, etc. were regarded as elaborations of the prototypical structural features and distinct from them, and were scored as Elaborated structural features. Nonstructural features were those elements that are not prototypical of house descriptions. These were subsequently separated into two types: those that were exterior to the house (i.e., trees, garages) and those that were interior to the house (i.e., kitchen, furniture).

## Results

A $t$-test used to compare the average number of categorized features in each medium revealed that there were significantly more features drawn than listed, $t(15) = 3.05$, $p < .008$ (see Figure 1). When the 12 most frequently represented features were ranked, the Kendall correlation indicated a significant, positive relationship between verbal and graphic features, $r = .51$, $p < .01$, 2-tailed. The analyses for the type of features for each medium revealed that

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Insert Figure 1 about here

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the majority of children (60%) included the same structural features (door, window, roof) in both their graphic and verbal descriptions. The Chi Square analyses revealed that children were more likely to include door, $\chi^2 = 10.86$, $p < .02$, window, $\chi^2 = 12.89$, $p < .01$, and roof, $\chi^2 = 7.6$, $p < .05$, in both their pictures and descriptions than in only one medium. However, $t$-tests indicated that drawings included significantly more structural ($t = 2.24$, $p < .05$) and elaborated structural features (door: $t(15) = -4.33$, $p < .001$; window: $t(15) = -3.43$, $p <$

.01; roof: $t(15) = -3.09$, $p < .01$) than verbal descriptions. Additional analyses revealed that while the number of nonstructural features was the same for both mediums, drawings contained more exterior nonstructural features, $t(15) = 3.38$, $p < .01$, while verbal descriptions included more interior nonstructural features, $t(15) = 3.26$, $p < .01$. Table 1 shows the percentage of children who included each type of feature in their drawings, in their lists, and in both.

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Insert Table 1 about here

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## Discussion

The fact that all three types of features were both drawn and verbally listed indicates their importance for representing the house concept. However, the results indicate that the frequency of each type of feature was significantly influenced by the mode of representation. The finding that more features were drawn than verbally listed is interpretable when one considers language's unique ability to subsume multiple features in a single symbol. The fact that fewer features were mentioned than drawn suggests that children are cognizant that verbal labels connote both a structural feature and it's elaborations, and that graphic symbols require more detail than their verbal counterparts. For example, the word "window" subsumes curtains, panes, etc. in its meaning while depictions of squares do not, and thus require elaborations in order to convey the same concept.

Overall, these results suggest that the same symbolic system is tapped by both verbal and nonverbal mediums since the types of features mentioned in children's descriptions parallel their drawings of the same object. Furthermore, the finding that the frequency of structural, elaborated structural, and exterior nonstructural features contained in both mediums differed indicates a functional distinction in these systems for representing an object.

Table 1

Structural, Elaborated Structural, and Nonstructural Components

| | | Medium | | |
|---|---|---|---|---|
| STRUCTURAL | ELABORATED STRUCTURAL | % included in Drawing | % included in Verbal | % included in Both |
| Door | | 87.50 | 62.50 | 62.50 |
| | Door knob | 87.50 | 6.25 | 6.25 |
| | Door window | 18.75 | 0 | 0 |
| | Door window pane | 6.25 | 0 | 0 |
| | Door window curtain | 12.50 | 0 | 0 |
| | Door lock | 0 | 6.25 | 0 |
| Window | | 87.50 | 75 | 68.75 |
| | Multiple windows | 81.25 | 50 | 43.75 |
| | Window pane | 56.25 | 6.25 | 6.25 |
| | Window curtain | 18.75 | 6.25 | 0 |
| Roof | | 81.25 | 75 | 62.50 |
| | Roof material | 18.75 | 0 | 0 |
| | Chimney | 56.25 | 43.75 | 37.50 |
| | Chimney material | 6.25 | 0 | 0 |
| | Chimney smoke | 43.75 | 0 | 0 |
| **NONSTRUCTURAL FEATURES** | | | | |
| **INTERNAL** | | | | |
| Furniture | | 0 | 37.50 | 0 |
| Bathroom | | 0 | 25 | 0 |
| Kitchen | | 0 | 18.75 | 0 |
| Dining Room | | 0 | 18.75 | 0 |
| Living room | | 0 | 12.50 | 0 |
| Hall | | 0 | 12.50 | 0 |
| Basement/Cellar | | 0 | 25 | 0 |
| Closet | | 0 | 25 | 0 |
| Bedroom | | 0 | 37.50 | 0 |

| | Medium | | |
|---|---|---|---|
| | % included in Drawing | % included in Verbal | % included in Both |
| Spare room | 0 | 18.75 | 0 |
| Stairs | 0 | 25 | 0 |
| **EXTERNAL** | | | |
| Wall | 100 | 37.50 | 37.50 |
| Wall material | 6.25 | 12.50 | 0 |
| Garage | 18.75 | 18.75 | 12.50 |
| Garage detail (eg,window) | 12.50 | 12.50 | 0 |
| Landscape (eg, trees) | 43.75 | 6.25 | 0 |
| Yard | 12.50 | 12.50 | 0 |
| Walkway | 12.50 | 0 | 0 |
| Sky | 56.25 | 0 | 0 |
| People | 12.50 | 25 | 0 |

Figure Caption

**Figure 1: Mean number of categorized features in each medium.**